

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 2-8 and 11-14 are currently pending; Claims 2-6, 8, and 11-14 are amended; and Claims 1, 10, 15-22, 24-31, and 33-42 are cancelled without prejudice by the present amendment.

The outstanding Official Action objected to Claim 37; rejected Claims 22 and 41 under 35 U.S.C. § 112, second paragraph; rejected Claims 1 and 19 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent Application Publication No. 2003/0025785 to Nihei in view of U.S. Patent Application Publication No. 2002/0063770 to Takesue, U.S. Patent No. 6,281,922 to Suzuki, and Japanese Patent No. 2001/091870 to Watanabe; rejected Claims 1-3, 5, 8, 19, 38, and 40 under 35 U.S.C. § 103(a) as unpatentable over Nihei in view of Takesue, Suzuki, and U.S. Patent Application Publication No. 2003/002578 to Amada hereinafter (Amada I); rejected Claim 4 under 35 U.S.C. § 103(a) as unpatentable over Nihei in view of Takesue, Suzuki, and Amada, and further in view of U.S. Patent Application No. 2002/0149666 to Amada, hereinafter (Amada II); rejected Claim 4 under 35 U.S.C. § 103(a) as unpatentable over Nihei in view of Takesue, Suzuki, Amada I, and further in view of U.S. Patent No. 5,565,964 to Tashiro; rejected Claims 6 and 21 under 35 U.S.C. § 103(a) as unpatentable over Nihei in view of Takesue, Suzuki, and Amada I, and further in view of U.S. Patent Application Publication No. 2001/0028387 to Maeda; rejected Claim 7 under 35 U.S.C. § 103(a) as unpatentable over Nihei in view of Takesue, Suzuki, Amada I, and Maeda, and further in view of U.S. Patent Application Publication No. 2004/0184859 to Shimmura; rejected Claim 10 under 35 U.S.C. § 103(a) as unpatentable over Nihei in view of Takesue, Suzuki, and Amada I, and further in view of U.S. Patent Application Publication No. 2003/0142865 to Hirota; rejected Claims 11-14 and 20 under 35 U.S.C. § 103(a) as

unpatentable over Nihei in view of Takesue, Suzuki, Amada I, and Hirota, and further in view of U.S. Patent Application Publication No. 2002/0126152 to Morikawa; rejected Claim 15 under 35 U.S.C. § 103(a) as unpatentable over Nihei in view of Takesue, Suzuki, and Japanese Patent Application No. 2001/091870; rejected Claims 15, 17, 18, 19, and 39 under 35 U.S.C. § 103(a) as unpatentable over Nihei in view of Takesue, Suzuki, and Amada I; rejected Claim 16 under 35 U.S.C. § 103(a) as unpatentable over Nihei in view of Takesue, Suzuki, and Amada I, and further in view of Morikawa; rejected Claim 24 under 3 U.S.C. § 103(a) as unpatentable over Nihei in view of Takesue, Suzuki, and Japanese Patent Application No. 2001/091870; rejected Claims 24-26, 28, 31, and 42 under 35 U.S.C. § 103(a) as unpatentable over Nihei in view of Takesue, Suzuki, and Amada I; rejected Claim 27 under 35 U.S.C. § 103(a) as unpatentable over Nihei in view of Takesue, Suzuki, and Amada I, and further in view of Amada II; rejected Claim 29 under 35 U.S.C. § 103(a) as unpatentable over Nihei in view of Takesue, Suzuki, and Amada I, and further in view of Maeda; rejected Claim 30 under 35 U.S.C. § 103(a) as unpatentable over Nihei in view of Takesue, Suzuki, Amada I, and Maeda, and further in view of Shimmura; rejected Claim 33 under 35 U.S.C. § 103(a) as unpatentable over Nihei in view of Takesui, Suzuki, and Amada, further in view of Hirota; and rejected Claims 34-37 under 35 U.S.C. § 103(a) as unpatentable over Nihei in view of Takesue, Suzuki, Amada, and Hirota, further in view of Morikawa.

Applicant submits that the objection to Claim 37 is rendered moot by the present amendment.

Applicant submits that the rejection of Claims 22 and 41 under 35 U.S.C. § 112, second paragraph is rendered moot by the present amendment.

In light of the rejections of the claims under 35 U.S.C. § 103(a), Claim 11 is rewritten into independent form, and the remaining claims are amended to change their dependency to Claim 11. No new matter is added.

Briefly recapitulating, amended Claim 11 is directed to an optical writing system. The optical writing system includes at least two laser diodes, a polygonal mirror, a first correction mechanism, and a second correction mechanism. The first correction mechanism is configured to receive a first external parameter, scan data of two laser diodes by one scanning movement with the polygonal mirror, and correct, based on the first external parameter, a dot forming position of a terminating edge in a main scanning direction by shifting arbitrarily a phase of a picture element clock. The second correction mechanism is configured to receive a second external parameter, and correct, based on the second external parameter, an amount of deviation in a data writing position along a vertical scanning direction to be approximately one laser diode line width. The second external parameter includes information indicating that a type of a document is one of a character document, a photography document, a mixed character and photography document, and a non-character and non-photography document. The second correction mechanism is further configured to enable correction of an amount of deviation in the data writing position in accordance with a first difficulty level when the information indicates that the type of document is a character document.

Turning now to the applied references, Nihei describes an apparatus, for use in an image forming apparatus that includes a correction mechanism. According to Nihei, the correction mechanism is booted by a light writing apparatus and corrects a dot forming position of a last edge in a main scanning direction by shifting the phase of a pixel clock with a predetermined value.<sup>1</sup> Suzuki describes an image forming apparatus producing laser beams

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<sup>1</sup> See Nihei at paragraphs [0113] and [0114].

A and B. Suzuki describes the image forming apparatus detecting and correcting a position displacement of the scanning lines for lasers A and B.<sup>2</sup>

Takesue describes an image forming apparatus that detects a phase error of a plurality of light beams in a main scan direction of an image forming region.<sup>3</sup> Amada I describes a scanning device having a beam deviating device to deviate four beams irradiated from a first and second light source sections, and a beam pitch correcting device to correct the beam pitch by relatively deviating a light axis among the respective beams on a sub scanning direction cross sectional plane.<sup>4</sup>

The outstanding Official Action acknowledges that the combination of Nihei, Suzuki, Takasue, and Amada I, when applied to Claim 10, fails to disclose or suggest that *the second external parameter includes information indicating that a type of a document is one of a character document, a photography document, a mixed character and photography document and a non-character and non-photography document*. To cure this deficiency, the outstanding Official Action relies on Hirota.<sup>5</sup>

Referring to Figure 1 of Hirota, a color digital copying machine has an automatic document feeder 100, an image reader 200, and an image former (printer) 300. The image reader 200 reads a document which is fed to an image read position by the automatic document feeder 100, and then the read image data is transmitted to the image former 300, for forming an image.<sup>6</sup>

Hirota describes that a user can specify a document mode on an operation panel. The document modes include a character mode, a map mode, a character photograph mode, a photograph mode, a photographic paper photograph mode, and a print photograph mode.<sup>7</sup>

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<sup>2</sup> See Suzuki at col. 7, lines 5-30.

<sup>3</sup> See Takesue at paragraph [0021].

<sup>4</sup> See Amada I at paragraph [0015].

<sup>5</sup> See Official Action of March 22, 2007 at page 13, paragraph 9.

<sup>6</sup> See Hirota at paragraph [0054].

<sup>7</sup> See Hirota at paragraph [0126].

Applicant submits that a *prima facie* case of obviousness has not been presented because there is no motivation to combine Hirota with Nihei, Suzuki, Takasue, and Amada I. MPEP §706.02(j) notes that to establish a *prima facie* case of obviousness there must be at least some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Alternatively, the courts found that at least a reason must be provided that justifies combining the teachings of the applied art.

Applicant submits that Hirota merely describes image data processing, i.e., such as halftone processing, etc., in accordance with a type of an original document. As required by Claim 11, a first correction mechanism is configured to *correct a dot forming position of a terminating edge in a main scanning direction*, and a second correction mechanism is configured to *correct an amount of deviation in a data writing position along a vertical scanning direction to be approximately one laser diode line width*.

Applicant submits that image data processing apparatuses, such as the digital copying machine of Hirota, do not include these techniques. For example, according to one non-limiting example of Applicant's invention, a write start position is deviated by one scanning line when the original document is a character type. Accordingly, since image data processing apparatuses do not include this feature, Applicant submits that one of ordinary skill in the art would not use the descriptions of Hirota to develop a second correction mechanism configured to *correct an amount of deviation in a data writing position along a vertical scanning direction to be approximately one laser diode line width*.

Thus, for these reasons, Applicant submits that there is no motivation or reason to combine Hirota with Nihei, Suzuki, Takasue, and Amada I.

Further, the outstanding Official Action acknowledges in regard to Claim 11 that Nihei, Suzuki, Takasue, Amada I, and Hirota fail to disclose or suggest *a second correction*

*mechanism further configured to enable correction of an amount of deviation in a data writing position in accordance with a first difficulty level when the information indicates that the type of document is character document.* To cure this deficiency, the outstanding Official Action relies on Morikawa.<sup>8</sup>

The outstanding Official Action asserts that paragraphs [0039] and [0040] of Morikawa discloses this feature. These cited portions of Morikawa describe an operation and display section for an image forming apparatus. Referring to Figure 8 of Morikawa, a user touches a “Kind of Document” key to input the kind of documents to be copied. For example, the user has the option of inputting a text, text/photo, a photo, or a light document.<sup>9</sup>

Additionally, the user of the operation and display section has the option of selecting a density control. For example, an “Auto Density” feature automatically sets an image density, while a “Density Control” feature allows the user to adjust image density in multiple steps.<sup>10</sup>

However, Morikawa fails to disclose or suggest a *second correction mechanism further configured to enable correction of an amount of deviation in a data writing position in accordance with a first difficulty level when the information indicates that the type of document is character document.* That is, Morikawa merely describes a density control feature that adjusts an image density based on a type of document. As discussed above, a write start position is deviated by one scanning line when the original document is a character type. Morikawa neither discloses nor suggests that when the user specifies the “Kind of Document” as a text document, a density control for a text document *enables correction of an amount of deviation in a data writing position in accordance with a first difficulty level* as required by Claim 11.

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<sup>8</sup> See Official Action of March 22, 2007 at page 14, paragraph 10.

<sup>9</sup> See Morikawa at paragraph [0039].

<sup>10</sup> See Morikawa at paragraph [0040].

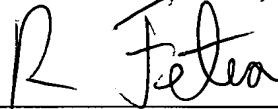
Thus, Applicant respectfully submits that independent Claim 11 and each of the claims depending therefrom patentably distinguish over the combination of Nihei, Suzuki, Takasue, Amada I, Hirota, and Morikawa.

Applicant respectfully submits that entry of this amendment under 37 C.F.R. § 1.116 is in order as the number of issues for appeal has been reduced by canceling Claims 15-22, 24-31, and 33-42. Also, new independent Claim 11 presents only the features already considered by the Examiner.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the present application is in condition for formal allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.



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James J. Kulbaski  
Registration No. 34,648

Customer Number  
**22850**

Tel: (703) 413-3000  
Fax: (703) 413 -2220  
(OSMMN 03/06)

Remus F. Fetea, Ph.D.  
Registration No. 59,140